HBV Research UK: why bother?

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Hypothesis-based research

- My hypothesis:

“If we collect enough data from enough patients, then something interesting will emerge …..”

Proof: HCV Research UK

- National cohort of 12,000 patients from 59 centres, plus database and biobank, patients enrolled with written informed consent
- Set up as a resource to support research into all aspects of HCV infection

HCV Research UK

- Hugely successful by its own criteria:
- 92 applications to TDAC from academia/industry, UK/abroad
- Studies include phylogeography, host and viral genomics, lipidomics, metabolomics, diagnostics, innate and adaptive immune responses, co-morbidities, cost-effectiveness
- Data from entire cohort, plus 11,320 aliquots of biological samples (45% of patients) have been released for TDAC studies
- > £1.5 million recouped in cost recovery (mostly from pharma) allowing continuation well beyond grant end date
- An avalanche of manuscripts is now appearing

Conclusion from this experiment:

- Why not create HBV Research UK?

HBV Research UK possibilities: one extreme

- Aggregated data collection from multiple sites
    - Do-able now, without additional funding

HepCare data

- 13 sites

Plymouth - ODN hub
Royal Cornwall
Royal Devon
North Devon
Brighton - ODN hub
East Sussex
West Sussex
King’s - ODN hub
St George’s - ODN hub
Nottingham - ODN hub
North Manchester General - ODN hub
Royal Liverpool - ODN hub
Royal Hallamshire - ODN hub

HepCare data: 13 sites. 9929 HBsAg positives

- Gender: 44% male, 36% female, 20% not stated
- e antigen positive n=1164 (12%); e antigen negative n=7204 (73%)

- Age:

18-30 n = 847 (9%)
30-50 n = 5922 (60%)
50-70 n = 2309 (23%)
>70 n = 392 (4%)

HBV DNA:

<20 IU/ml n = 2867 (29%)
20-2000 IU/ml n = 3711 (37%)
2000-20000 IU/ml n = 1107 (11%)
>20000 IU/ml n = 924 (9%)

With thanks to Phil Troke and Gilead Sciences Ltd

HBV Research UK: possibilities

- Aggregated data collection from multiple sites
  - Do-able now, without additional funding
- If you wanted to know ….. e.g
  - How many male patients aged 18-30 are there who are e antigen positive with a viral load of >20000 IU/ml?
- Can extend the datafields
  - Treatment with start/end dates, regimen
  - Ethnicity/place of birth
  - Liver function tests
  - Etc etc

Aggregated data collection: Issues

- Which data sets?
  - HepCare – limited to those sites on line
  - Local clinic databases – potentially more comprehensive – as long as we all collect the same data in the same way!
- Who has control over the analysis?
  - For HepCare – currently in Sweden; Agreement on data controller
- Strengths
  - Inexpensive; do-able; manageable; generates the “big picture”
- Limitations
  - Cannot track back to individual patients; difficult to do longitudinal studies

HBV Research UK possibilities: the other extreme

- The full monty – clinical cohort, database, biobank, with explicit patient consent
  - Requires funding (HCVRUK was set up with £1.9 million grant)
  - IRAS and ethics
  - Location of biorepository and nature of samples to be stored
- Strengths
  - See HCV Research UK
- Limitations
  - Extensive commitment in set-up and long-term management

HBV Research UK: decisions, decisions

- Database only or database + biobank?
  - There is already a "virtual" biobank which would support some studies – diagnostic labs store (or should do) samples for at least a year
- Patient consent or not?
- Cross-sectional or longitudinal (cohort-based) set up?
- Selected sites or global?
- Open-ended (the Irving hypothesis) or targeted, project-based patient recruitment/data collection?

Factors influencing decisions

- Funding
    - Can we lobby MRC, Wellcome, NIHR …..?
- Funding
    - Pharma, diagnostics industry?
- Funding
- Enthusiasm of core group for set up
- Willingness of PIs to contribute
    - NIHR portfolio status helps

HBV Research UK:

- What it might be …..
  - A way of describing the burden and extent of diagnosed HBV infection in patients attending secondary care
  - A valuable resource of significant value to the UK HBV research community and to patients with HBV infection
- What it will NOT be …..
  - A way of describing the epidemiology of HBV infection in the UK

Summary

- Data are powerful; data (and samples) from 10 clinics are more powerful than from a single clinic
- We (as a research community) could do better even without significant funding
  - Unified data collection across all sites
  - Pooling of aggregated data
  - Assist with provision of access to local stored samples
- Any significant (>£10k?) funding would allow further development
- Decision 1 should focus on HBV Research UK – a worthwhile concept or not?